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FINANCE

NKARTA'S \$114M SERIES B TO FUND CLINICAL NK CELL PROGRAMS, MANUFACTURING FACILITY

BY LAUREN MARTZ, ASSOCIATE EDITOR

After stretching its \$11.5 million series A round to bring its most advanced preclinical NK cell programs within a year of IND submissions while assembling a management team with expertise ranging from discovery to manufacturing, Nkarta has attracted \$114 million in an oversubscribed series B round led by Samsara BioCapital.

Other new investors Amgen Ventures, Deerfield Management, LSP, Logos Capital and RA Capital joined existing investors New Enterprise Associates, Novo Holdings A/S and SR One in the round.

The new funds will be used to bring three preclinical programs -- two involving the same therapy - through clinical proof of concept and create a GMP manufacturing facility for early stage clinical trials, which should take South San Francisco's Nkarta Inc. into early 2022.

"It's critically important to do manufacturing internally, and in a capital-efficient way."

Mike Dybbs, Samsara

Nkarta's lead program, NKX101, is an allogeneic NK cell therapy genetically modified to express a chimeric NKG2D receptor complex and a membrane-bound IL-15. NKG2D is an activating NK cell receptor that enhances tumor recognition by targeting ligands on tumors; IL-15 is a cytokine that enhances cell persistence and activity (see "**Engineered to Kill**").

In the next 12 months, Nkarta plans to submit separate INDs for NKX101 in solid tumors and

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Nkarta isn't the first company to bring a CD19-targeted CAR into the clinic. Earlier this year, NantKwest Inc. (NASDAQ:NK) began a Phase I trial of its CD19 t-haNK cell, which is an NK cell therapy that includes a CD19-targeting CAR and a high affinity CD16 to enhance the NK cells' ability to stimulate antibody-dependent cellular cytotoxicity.

On Monday, FDA cleared an IND from Fate Therapeutics Inc. (NASDAQ:FATE) for its CAR-NK cell therapy FT596, an iPS cell-derived NK cell expressing a CD19 CAR, a novel human CD16 receptor and an IL-15 receptor fusion.

According to Hastings, Nkarta's expansion and manufacturing processes are its differentiating factors. The company is creating its own facility with the new funding that it plans to open next year.

Samsara's Mike Dybbs told BioCentury, "For any cell or gene therapy company in this capacity constrained era, it's critically important to do manufacturing internally, and in a capital-efficient way." Dybbs and LSP's Fouad Azzam joined Nkarta's board.

Nkarta SVP and CFO Matthew Plunkett said the company's expansion technology plus allogeneic focus allows it to be much more cost-efficient than CAR T cell therapies. "The cost of goods alone for many CAR T cell therapies is in the six-figure range, and I believe Nkarta's costs will be two orders of magnitude lower at the commercial peak."

He added that the cost of building the manufacturing facility won't be high. "Because we plan to get many hundreds, or even thousands of doses per manufacturing run, we need a relatively small clinical GMP facility to supply all of our clinical trials. That will be in the mid-single-digit million range to build." He noted that the financing will also be used to prepare to build a commercial manufacturing facility.

In addition to the manufacturing capabilities, it was the management team and differentiated cell therapy platform, with the potential for better safety, solid tumor activity and off-the-shelf manufacturing than CAR T cells, that drove Samsara to invest.

"It's rare for a company at this stage with only a modest series A to have such a world class team with diverse skills from manufacturing to discovery to running trials," Dybbs added.

Targets: CD16 (FCGR3) - Fcγ receptor III; IL-15 - Interleukin-15; NKG2D (KLRK1; CD314) - Killer cell lectin-like receptor subfamily K member 1

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